

Burrowing depths addendum: Numerically dominant invertebrates collected from LPRSA. By species.

Addendum by R. S. Prezant

1/16/15

POLYCHAETES

"*Hobsonia florida*" ITIS reports an update in taxonomy to *Amphicteis floridus* Hartman, 1951

Amphicteis floridus is a tube-building, surface deposit feeder that feeds on small, light (in weight) organic particles (Self and Jumars, 1988). Usually intertidal or shallow subtidal and estuarine, its' tubes can extend to **10-20 cm depth** (Furota and Emmett, 1993). Females retain fertilized eggs within their tube where they undergo larval development (Zottoli, 1974 in Olson et al., 2009).

Furota, T. and R. L. Emmett. 1993. Seasonal changes in the intertidal and subtidal macrobenthic invertebrate community structure in Baker Bay, lower Columbia River estuary. U.S. Dept. Commer., NOAA Tech. Memo. NMFS=NWFSC-5, 68 pp

ITIS Report. 1996. *Amphicteis floridus* Hartman, 1951. Taxonomic Serial No. 67753.

Olson, M.A., R.N. Zajac and M.A. Russello. 2009. Estuarine-scale genetic variation in the polychaete *Hobsonia florida* (Ampharetidae; Annelida) in Long Island Sound and relationships to Pleistocene glaciations. Biol. Bull. 217: 86-94.

Self, R.F.L. and P.A. Jumars. 1988. Cross-phyletic patterns of particle selection by deposit feeders. J. Mar. Res. 46: 119-143.

Leitoscoloplos fragilis is a deposit feeder that feeds on organic particulates below the sediment surface (Bianchi et al, 1988). It feeds in "conveyer belt deposit feeder" fashion (Fauchald and Jumars, 1979) close to the anoxic boundary layer (this "sulfide layer" varies in depth in habitats inhabited by *L. fragilis* from **1 to 10 cm below sediment surface**) (Bianchi, 1988; Walbusser et al., 2004). Sardá et al (2000) consider *L. fragilis* a "vagrant species" most commonly occurring as burrowers in "sandy, non-organic sediments of beaches, and salt marsh areas...". Importantly the latter authors suggest that adults of this species "move" into the marsh during breeding season; sediment movements probably move juvenile specimens into areas of high sediment accumulation. Thus immature, smaller specimens concentrate along "the seaward creeks of the marsh".

Bianchi, T. S. 1988. Feeding ecology of subsurface deposit-feeder *Leitoscoloplos fragilis* Verrill. I. Mechanisms affecting particle availability on intertidal sandflat. J. Exper. Mar. Biol. Ecol. 116: 79-97.

Fauchald, K. and P. A. Jumars. 1979. The diet of worms: A study of polychaet feeding guilds. Oceanogr. Mar. Biol. Ann. Rev. 17: 193-284.

Sardá, R., S. Pinedo and A. Dueso. Estimating secondary production in natural populations of polychaetes: some general constraints. Bull. Mar. Sci. 67: 433-447.

Waldbusser, G.G., R. L. Marinelli, R.B. Whitlatch and P.T. Visscher. 2004. The effects of infaunal biodiversity on biogeochemistry of coastal marine sediments. Limnol. Oceanogr. 49: 1482-1492.

Laeonereis culveri, as an adult, is a non-selective sub-surface herbivore (2002) and deposit feeder, probably relying mostly on diatoms in soft, flocculent sediments. Adults have been collected in the Mytic River Estuary, Connecticut, in **depths down to 10 cm** whereas juveniles reside in the upper 2cm (Mazurkiewicz, 1975). This polychaete is also a sand tube dweller. Posey et al. (2002) consider *L. culveri* a "near surface burrower". Dauer et al. (1979) note that *L. culveri* is a surface deposit-feeder but development takes place within the subsurface burrows of the female worm. Many years ago Boesch (1977) already noted that *L. culveri* was an opportunistic species and thus frequently found in large numbers in impacted areas.

Boesch, D. F. 1977. New Look at the Zonation of Benthos Along the Estuarine Gradient." In Ecology of Marine Benthos, Coull, B. C., editor, pp. 245-66. Belle W. Baruch Library in Marine Science No.6. University of South Carolina Press, Columbia.

Dauer, D. M. 1979. Effects of non-point pollution on benthic invertebrates in the Lynnhaven River System. Virginia Water Resources Research Center Bulletin 117: 112pp.

Mazurkiewicz, M. 1975. Larval development and habits of *Laeonereis culveri* (Webster) (Polychaeta: Nereidae). Biol. Bull. 149: 186-204

Posey, M. H., T. D. Alphin, L. B. Cahoon, D. G. Lindquist, M. A. Mallini and M. B. Nevers. 2002. Top-down versus bottom-up limitation in benthic infaunal communities: direct and indirect effects. Estuaries 25: 999-1014.

Stocks, K. I. 2002. Flume experiments on post-settlement movement in polychaetes. J. Mar. Res. 60: 743-762.